

REMARKS

Claim Rejections - 35 U.S.C. § 102 and § 103

The Examiner has rejected claims 1-3 and 6-8 under 35 USC 102(e) as unpatentable over Buynoski (U.S. Patent No. 6,667,552). The Examiner has rejected claims 4-5 under 35 USC 103(a) as unpatentable over Buynoski (U.S. Patent No. 6,667,552) in combination with Dubin et al. (U.S. Patent No. 6,696,758). The Applicant respectfully traverses. The cited references fail to teach or render obvious all of the elements of the Applicants' claimed invention. In particular, the cited references fail to teach the element of independent claim 1 of *"a second layer formed over the first layer, the second layer having a second at least one interconnect, and wherein the second layer comprises a first sublayer and a second sublayer, the first sublayer is between the first layer and the second sublayer, and the second sublayer is between the first sublayer and the third layer, the first sublayer comprising an ILD, and the second sublayer comprising air."* In contrast, Buynoski teaches only air gaps formed between different layers of the interconnect structure illustrated in Figure 4 of Buynoski and fails to teach an interconnect structure formed with both an ILD layer and a layer of air. The interconnect structure of Buynoski formed with only air gaps between the different layers of the interconnect structure is described in Col. 6 lines 36 – 41: "As shown in FIG. 2, the dielectric material 11 is removed as with a slightly acidic buffered hydrofluoric acid solution, thereby creating voids or air gaps 20 through out the interconnection structure. The formation of air gaps 20 significantly reduces the capacitance of the entire interconnection system as the dielectric constant of air is taken as one."

The cited references also fail to teach the element of independent claim 1 of *"at least one shunt comprising a first material different from a second material of the first and second at least one interconnects selectively covering the top of the first and second at least one interconnects."* In contrast, Buynoski fails to teach an interconnect structure including a shunt layer. The Examiner stated in the Office Action dated June 23, 2005 that Buynoski

teaches at least one shunt (via 1) in Figs. 1-2 and Col. 6 and Col. 10. The Applicant respectfully disagrees. The via 1 of Figs. 1-2 of Buynoski is not the same as the shunt layer claimed by the Applicant in Claim 1. The shunt layer claimed by the Applicant in Claim 1 is illustrated in the Applicants' Figure 2M as shunt layers 240, 242, 212, and 214 formed on top of the interconnects 236, 238, 208, and 210, respectively. The shunt layers are distinct and different from the via plugs 234.

Dubin also fails to teach an interconnect structure formed of both an ILD material and a sublayer of air that further includes shunt layers formed selectively covering the interconnects.

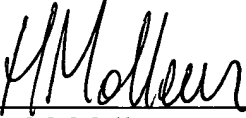
Therefore, the Applicant respectfully submits that the cited references, either individually or in combination, fail to teach or render obvious the Applicants' claim 1. As such, the cited references also fail to teach or render obvious the claims 2 – 5, 7 – 8 that depend upon and incorporate the limitations of claim 1.

If there are any additional charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

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